November 17, 2017

REMEDIAL INVESTIGATION / FEASIBILITY STUDY

Progress Report #16 – October 2017

Prepared for

COLUMBIA FALLS ALUMINUM COMPANY, LLC
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APPENDIX

1.0 INTRODUCTION

This Progress Report (Report) presents a summary of activities completed during the period of October 2017, on behalf of Columbia Falls Aluminum Company, LLC (CFAC), for the Remedial Investigation / Feasibility Study (RI/FS) being performed at the Anaconda Aluminum Co. Columbia Falls Reduction Plant (a/k/a Columbia Falls Aluminum Plant) generally located near Columbia Falls in Flathead County, Montana ("Site"). The RI/FS is being conducted pursuant to the Administrative Settlement Agreement and Order on Consent (AOC) dated November 30, 2015 between CFAC and the United States Environmental Protection Agency (USEPA) (CERCLA Docket No. 08-2016-0002).

This Report provides a description of the actions that have been taken to comply with the AOC during the reporting period and describes work planned for the upcoming reporting period, including an updated project schedule as Appendix A. This report also provides updates regarding the availability of any new, validated sampling data received by CFAC during the reporting period. Lastly, this Report provides an update on any scope revisions and/or project delays encountered and solutions implemented to address any changes.

2.0 WORK COMPLETED

This Section provides a summary of activities completed or ongoing in October 2017.

2.1 Submittal of Final Phase I Site Characterization Data Summary Report and Screening Level Ecological Risk Assessment Summary Report

CFAC/Roux Associates submitted the Final Phase I Site Characterization Data Summary Report (Phase I Data Summary Report) and response to Phase I Data Summary Report comments, and Final Screening Level Ecological Risk Assessment (SLERA) on September 18, 2017, and submitted the response to SLERA comments on September 19, 2017. The approval of the Final Phase I Data Summary Report and SLERA is pending with USEPA and MDEQ.

2.2 Preparation of the Groundwater and Surface Water Data Summary Report

The Phase I Site Characterization Scope of Work described in the RI/FS Work Plan and Phase I Sampling and Analysis Plan included four rounds of surface water and groundwater sampling. The fourth and final round of sampling was completed in June 2017. Data collected from the fourth round of sampling was submitted for validation in July 2017, and received from the validator in August 2017.

As discussed with USEPA/MDEQ, the results of all four rounds of sampling will be included in a data summary report. The Groundwater and Surface Water Data Summary Report (GW/SW Data Summary Report) will include a summary of all groundwater and surface water data collected during the Phase I Site Characterization, and a summary of the slug testing field activities and evaluation. The GW/SW Data Summary Report is expected to be submitted to USEPA/MDEQ for review in November 2017.

2.3 Submittal of the Asbestos Landfill Surface Soil Sampling Letter

Surface soil sampling at the Asbestos Landfills began on July 31, 2017 and was completed on August 10, 2017. The validated data generated during the surface soil sampling was received in September 2017. CFAC/Roux Associates submitted the surficial soil sampling results in a letter to USEPA, "Re: Surficial Soil Sampling Results from Asbestos Landfills" on October 19, 2017. The results from the surficial soil sampling conducted at each asbestos landfill will be considered and further evaluated during development of the Human Health Baseline Risk Assessment Work Plan.

2.4 South Percolation Ponds Expedited Risk Assessment Activities

On September 6, 2017, CFAC/Roux submitted a letter to USEPA requesting concurrence to expedite risk assessment activities in the South Percolation Ponds. As discussed with USEPA and MDEQ via conference call on August 8, 2017, high-water conditions in the Flathead River caused significant erosion of the dam on the east side of the Ponds. While the dam is currently stable, future highwater conditions in the Flathead River will cause additional erosion and could potentially compromise the dam if no action is taken. The purpose of the expedited risk assessment activities is to provide for a better understanding of environmental conditions in the Ponds and any potential human health or ecological risks associated with those conditions.

The proposed path forward described in the letter included, but was not limited to, determination of data gaps, development of a data gap sampling and analysis plan, a summary of field sampling and analysis activities to be completed in October/November 2017, and development of a technical memorandum to summarize the work completed and risk assessment findings. The findings will be incorporated into the Final Baseline Ecological and Human Health Risk Assessments.

USEPA concurred with the plan to expedite risk assessment activities in the South Percolation Ponds via e-mail correspondence on September 12, 2017. CFAC/Roux submitted an Expedited Risk Assessment Sampling and Analysis Plan (Expedited Risk Assessment SAP) for the South Percolation Ponds to USEPA on October 23, 2017. The Expedited Risk Assessment SAP discussed the approach to conduct sampling activities and laboratory analysis for locations within and around the South Percolation Ponds. USEPA concurred with the approach outlined in the letter in e-mail correspondence on October 24, 2017.

Roux Associates began sampling activities in accordance with the Expedited Risk Assessment SAP on October 30, 2017. Site reconnaissance was conducted on October 30, 2017 to confirm that all proposed sampling locations were accessible. A description of the field activities and a summary of the samples collected during the risk assessment sampling will be provided in the next progress report following the completion of sampling activities.

2.5 Preparation of Baseline Risk Assessment Work Plans

Roux Associates and their risk assessor subcontractor, EHS Support, LLC, continued the preparation of the Baseline Ecological and Human Health Risk Assessment Work Plans (Work Plans) in October 2017. The purpose of the Work Plans is to evaluate whether environmental conditions associated with historical smelting operations at the Site pose an unacceptable risk to ecological and human health receptors. The conceptual framework presented in the Work Plans will be used to support the development of a detailed study design and sampling plan in the Phase II Site Characterization Sampling and Analysis Plan (SAP), which will be submitted for agency review and comment following approval of the Work Plans. Both draft Work Plans are expected to be submitted to USEPA/MDEQ for review in November 2017.

2.6 Investigation Derived Waste Management

The Phase I Site Characterization field work was completed in the Summer of 2017. The two onsite frac tanks that were utilized to manage investigation derived water throughout the Phase I were cleaned by Cascade Drilling on September 7, 2018. The tank contents (2,000 gallons of residual drilling materials and rinsate) were extracted and transported offsite via tanker truck on September 8, 2017 to Chemical Waste Management, 17629 Cedar Springs Lane, Oregon 97812, in accordance with the IDW Management Plan. The two tanks were transported offsite by Cascade Drilling on October 17, 2017.

2.7 Concrete Sampling and Data Evaluation

Concrete sampling of one crushed concrete stockpile (Stockpile 01A and 01B together as one 5,000 cubic yard stockpile identified as Stockpile 01) was conducted by Hydrometrics on August 10, 2017, in accordance with the path forward outlined in the e-mail correspondence from USEPA dated June 28, 2017. The concrete sample was sent to TestAmerica in Edison, New Jersey. Concrete data was sent for data validation in August 2017 and was received in September 2017.

Concrete sampling of one crushed concrete stockpile (one 2,500 cubic yard stockpile identified as Stockpile 02) was conducted by Hydrometrics on September 1, 2017. The concrete sample was sent to TestAmerica in Edison, New Jersey. Concrete data was sent for data validation in September 2017 and was received in October 2017.

The validated analytical results for the concrete samples described above were provided to USEPA in a letter report dated October 26, 2017; and the results were discussed with USEPA and MDEQ during a conference call on October 30, 2017. During the call, USEPA requested that a recommendation for the use of the crushed concrete be provided.

CFAC's contractor Calbag Resources, LLC (Calbag) is developing its recommendation regarding the use of the concrete stockpiles. The recommendation will be provided in a letter to USEPA and MDEQ for review and concurrence prior to using any concrete for demolition backfilling activities or disposal.

2.8 Weekly Reporting, Project Conference Calls, and Project Meetings

Weekly reports will be submitted to USEPA for South Percolation Ponds Expedited Risk Assessment sampling activities in November 2017.

A project update conference meeting was held at the CFAC Site with the project team on October 5, 2017. Representatives from USEPA, MDEQ, Glencore, CFAC, and Roux Associates were present for the meeting. The meeting was held to provide an update for the new USEPA and MDEQ project personnel, to discuss the approach for the Expedited Risk Assessment, to review the Phase I Site Characterization schedule, and to prepare for the Community Liaison Panel (CLP) / Public Meeting. Meeting minutes for the project update meeting were distributed to the project team via e-mail on October 16, 2017. There is no project update call scheduled for November 2017.

A CLP meeting was held on October 5, 2017 at the Teakettle Community Room in Columbia Falls, Montana. Representatives from the CLP, USEPA, MDEQ, Glencore, CFAC, Roux Associates, and Ann Green Communications were present for the meeting. The CLP will meet again in Spring 2018.

3.0 WORK PLANNED FOR NEXT REPORTING PERIOD

This section summarizes the work planned for the next reporting period of November 2017.

3.1 Groundwater and Surface Water Sampling Data Summary Report

As noted in Section 2.2, CFAC/Roux Associates will continue evaluating the four rounds of data and will continue preparation of the GW/SW Data Summary Report during the next reporting period. The GW/SW Data Summary Report is expected to be submitted to USEPA in November 2017.

3.2 South Percolation Ponds Expedited Risk Assessment Activities

As described in Section 2.4, Roux Associates began risk assessment sampling activities in accordance with the Expedited Risk Assessment SAP on October 30, 2017. Field sampling activities will be completed in November 2017; including the collection of soil, sediment, and surface water samples. All samples will be sent to TestAmerica in Edison, New Jersey for the analyses listed in the SAP. The sampling results and findings from the Expeditated Risk Assessment will be summarized in a technical memorandum for submission to USEPA in the first quarter of 2018. In addition, the results will be used as part of the Baseline Ecological and Human Health Risk Assessments for the Site.

3.3 Baseline Risk Assessment Work Plans

As described in Section 2.5, Roux Associates and EHS Support, LLC, will continue to evaluate the data from the Phase I Site Characterization and continue preparation of the draft Baseline Ecological and Human Health Risk Assessment Work Plans. The work plans are expected to be submitted to USEPA/MDEQ for review in November 2017.

3.4 Concrete Sampling and Data Evaluation

As described in Section 2.7, Calbag will develop a recommendation for the disposition of the concrete stockpiles (i.e., either use as backfill or offsite disposal). The recommendation will be provided in a letter to USEPA and MDEQ for review and concurrence prior to using any concrete for demolition backfilling activities or disposal.

Sampling and laboratory analysis of crushed concrete from the Main Plant building is planned to continue during the next reporting period(s), in accordance with the path forward outlined in the email correspondence from USEPA dated June 28, 2017. Concrete will continue to be sampled after being removed from the Main Plant Building and after being crushed by Calbag. Concrete samples will be collected at a minimum frequency of one, 30-point composite sample per 5,000 cubic yards of crushed concrete. Results of the concrete sampling activities and a recommendation for disposition of each pile (i.e., either use as backfill or offsite disposal) will be provided to the USEPA and MDEQ for review and concurrence throughout the sampling efforts, prior to using any concrete for demolition backfilling activities or disposal.

4.0 DATABASE UPDATES

Validation of laboratory data from the Phase I Site Characterization is being performed by Laboratory Data Consultants (LDC) as a subcontractor to Roux Associates. No data was provided to LDC in October 2017, and no validated electronic data deliverables (EDDs) were uploaded to the project database. The data generated as part of the Expedited Risk Assessment for the South Percolation Ponds is expected to be submitted to LDC for validation in November 2017.

Validated data will continue to be imported into the project database and managed in accordance with the data management procedures outlined in Section 7.10 of the QAPP. Future progress reports will discuss updates to the project database.

5.0 SCOPE/SCHEDULE REVISIONS

An updated Phase I Site Characterization schedule is attached to this Progress Report in Appendix A. The schedule was updated to reflect progress based on RI/FS activities completed through October 2017. The project schedule was revised as per the outcomes of the discussions with USEPA and MDEQ in August 2017 and to account for response time to the additional EPA/MDEQ comments/revisions on the Phase I Data Summary Report and SLERA Summary Report. As discussed with USEPA during the October 5, 2017 project update meeting, CFAC/Roux requested a modification to the project schedule in a letter to USEPA on October 23, 2017, "Re: Modification to Table 3 in CFAC RI/FS Work Plan" to modify the deliverable date of the Draft Candidate Technologies and Remedial Alternatives Memorandum until after the completion of the Baseline Risk Assessment. USEPA did not yet provide a formal response. No changes to the schedule are expected at this time for the remaining Phase I Site Characterization tasks.

On behalf of CFAC, Roux Associates will continue to pursue the overall objectives described in the AOC and the RI/FS Work Plan. Roux Associates will continue to inform the USEPA of completed and upcoming activities pursuant to the requirements of the AOC in future progress reports.

Respectfully submitted,

ROUX ASSOCIATES, INC.

Michael Ritorto
Principal Hydrogeologist /
RI Project Manager

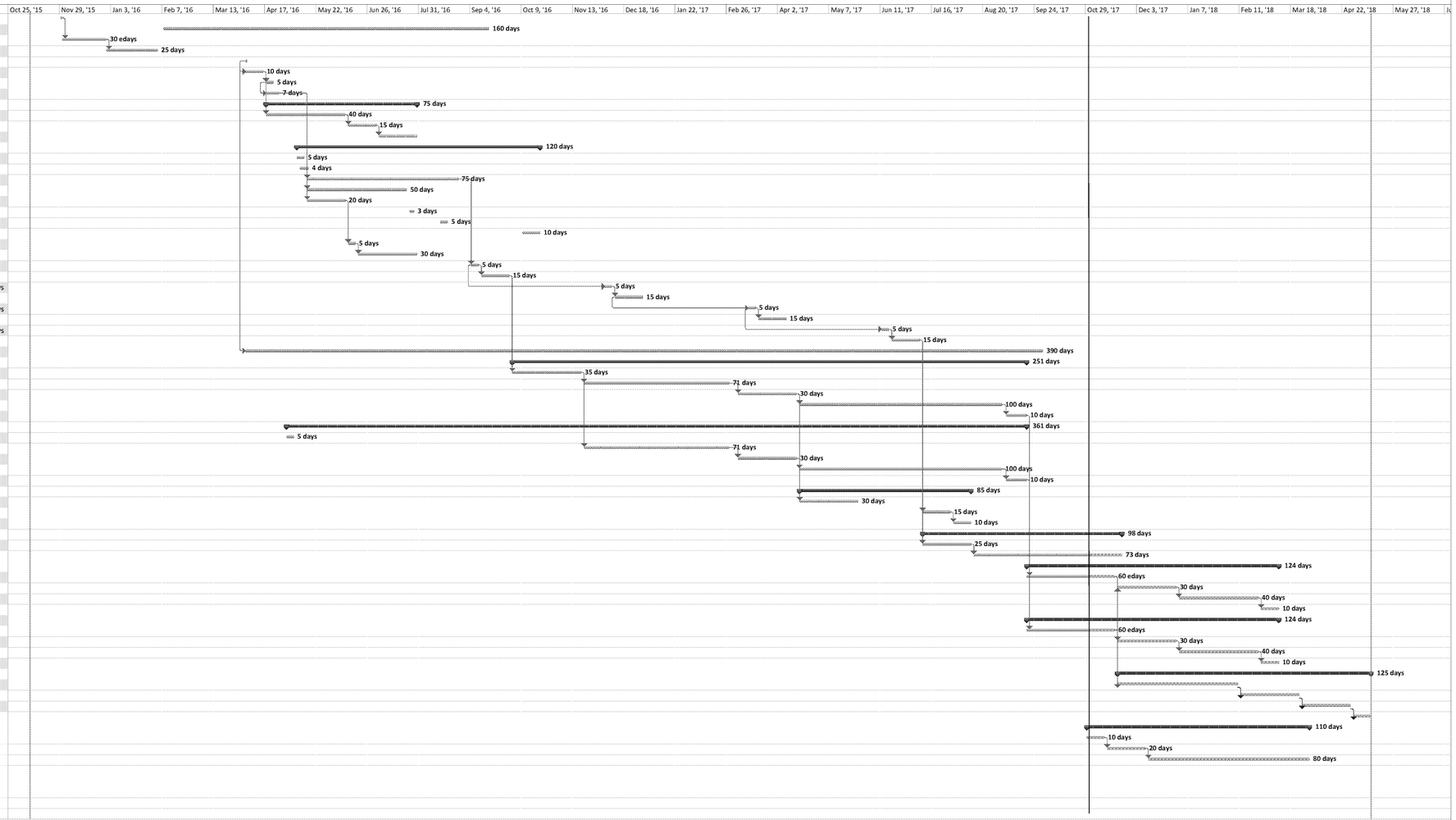
Andrew Baris
Vice President / Principal Hydrogeologist
RI/FS Project Manager

APPENDIX A

Project Schedule

CFAC RI/FS Schedule Updated October 31, 2017

ID	Deliverable	Task Name	Duration	Start	Finish	Company	Predecessors
1		AOC is executed by all parties	1 day	Mon 11/30/15	Mon 11/30/15	EPA/CFAC	
2		Historical Records Review	160 days	Mon 2/8/16	Fri 9/16/16	Roux	
3	X	Draft Health and Safety Plan (HASP)	30 edays	Mon 11/30/15	Wed 12/30/15	Roux	1
4	X	Final Health and Safety Plan (HASP)	25 days	Thu 12/31/15	Wed 2/3/16	Roux	3
5		Site is clear of Snow / Field Work Begins	1 day	Mon 4/4/16	Mon 4/4/16		
6		Pre-Intrusive Task 1 - Site Reconnaisance	10 days	Mon 4/4/16	Fri 4/15/16	Roux	5SS
7		Pre-Intrusive Task 2 - Geophysical Survey	5 days	Mon 4/18/16	Fri 4/22/16	Roux	6
8		Pre-Intrusive Task 3 - Soil Gas Survey	7 days	Mon 4/18/16	Tue 4/26/16	Roux	7SS
9		**SAP Addendum**	**75 days**	**Mon 4/18/16**	**Fri 7/29/16**	**Roux**	
10	X	Draft SAP Addendum	40 days	Mon 4/18/16	Fri 6/10/16	Roux	6
11		EPA Review of Draft SAP Addendum	15 days	Mon 6/13/16	Fri 7/1/16	EPA	10
12	X	Final SAP Addendum	20 days	Mon 7/4/16	Fri 7/29/16	Roux	11
13		**Source Area Investigation - Phase I Site Characterization Field Activities**	**120 days**	**Mon 5/9/16**	**Fri 10/21/16**	**Roux/Hydrometrics**	
14		GPR Utility Mark-Outs	5 days	Mon 5/9/16	Fri 5/13/16	Roux	
15		Clearing / Grading for Drill Rig Access	4 days	Wed 5/11/16	Mon 5/16/16	Roux	
16		Sonic Rig 1	75 days	Mon 5/16/16	Fri 8/26/16	Roux	8FS+10 days
17		Sonic Rig 2	50 days	Mon 5/16/16	Fri 7/22/16	Roux	8FS+10 days
18		Geoprobe	20 days	Mon 5/16/16	Fri 6/10/16	Hydrometrics	8FS+10 days
19		Landfill GPR Survey Field Work	3 days	Mon 7/25/16	Wed 7/27/16	Roux	
20		Test Pitting	5 days	Mon 8/15/16	Fri 8/19/16	Roux	
21		Additional Monitoring Well redevelopment activities	10 days	Mon 10/10/16	Fri 10/21/16	Hydrometrics	
22		Background Area Investigation	5 days	Mon 6/13/16	Fri 6/17/16	Hydrometrics	18
23		Operational Grid Area Investigation	30 days	Mon 6/20/16	Fri 7/29/16	Hydrometrics	22
24		Site-Wide Surface Water Sampling - Event 1	5 days	Mon 9/5/16	Fri 9/9/16	Roux/Hydrometrics	16FS+5 days
25		Site-Wide Groundwater Sampling - Event 1	15 days	Mon 9/12/16	Fri 9/30/16	Roux/Hydrometrics	24
26		Site-Wide Surface Water Sampling - Event 2	5 days	Mon 12/5/16	Fri 12/9/16	Roux/Hydrometrics	24SS+90 edays
27		Site-Wide Groundwater Sampling - Event 2	15 days	Mon 12/12/16	Fri 12/30/16	Roux/Hydrometrics	26
28		Site-Wide Surface Water Sampling - Event 3	5 days	Mon 3/13/17	Fri 3/17/17	Roux/Hydrometrics	27SS+90 edays
29		Site-Wide Groundwater Sampling - Event 3	15 days	Mon 3/20/17	Fri 4/7/17	Roux/Hydrometrics	28
30		Site-Wide Surface Water Sampling - Event 4	5 days	Mon 6/12/17	Fri 6/16/17	Roux/Hydrometrics	28SS+90 edays
31		Site-Wide Groundwater Sampling - Event 4	15 days	Mon 6/19/17	Fri 7/7/17	Roux/Hydrometrics	30
32		Investigation Derived Waste Management/Disposal	390 days	Mon 4/4/16	Fri 9/29/17	Roux	5SS
33		**Phase 1 Site Characterization Data Summary Report**	**251 days**	**Mon 10/3/16**	**Mon 9/18/17**	**Roux**	
34		Data Validation Completion	35 days	Mon 10/3/16	Fri 11/18/16	Data Validator	25
35	X	Draft Phase I Site Characterization Summary Report to EPA/MDEQ	71 days	Mon 11/21/16	Mon 2/27/17	Roux	34
36		EPA review of Draft Phase I Data Summary Report	30 days	Mon 3/6/17	Fri 4/14/17	EPA	35
37	X	Response to EPA/MDEQ Comments on Draft Phase I Data Summary Report	100 days	Mon 4/17/17	Fri 9/1/17	Roux/EPA	36
38	X	Final Submission of Phase I Summary Report to EPA/MDEQ	10 days	Tue 9/5/17	Mon 9/18/17	Roux	37
39		**Screening Level Ecological Risk Assessment (SLERA)**	**361 days**	**Mon 5/2/16**	**Mon 9/18/17**	**Roux**	
40		Completion of SLERA Field Work	5 days	Mon 5/2/16	Fri 5/6/16	Roux	
41	X	Draft SLERA Summary Report	71 days	Mon 11/21/16	Mon 2/27/17	Roux	34
42		EPA review of Draft SLERA Report	30 days	Mon 3/6/17	Fri 4/14/17	EPA	41
43	X	Response to EPA/MDEQ Comments on Draft SLERA Summary Report	100 days	Mon 4/17/17	Fri 9/1/17	Roux/EPA	42
44	X	Final Submission of SLERA Report to EPA/MDEQ	10 days	Tue 9/5/17	Mon 9/18/17	Roux	43
45		**2017 Additional Field Activities**	**85 days**	**Mon 4/17/17**	**Fri 8/11/17**	**Roux**	
46		Preparation of 2017 field activities plan/SAP Mods	30 days	Mon 4/17/17	Fri 5/26/17	Roux	36
47		Pnuematic Slug Testing	15 days	Mon 7/10/17	Fri 7/28/17	Roux	31
48		Asbestos Landfill Soil Sampling	10 days	Mon 7/31/17	Fri 8/11/17	Roux/Hydrometrics	47
49		**Groundwater and Surface Water Sampling Data Summary Report**	**98 days**	**Mon 7/10/17**	**Wed 11/22/17**	**Roux**	
50		Validation of Round 4 sampling data	25 days	Mon 7/10/17	Fri 8/11/17	Data Validator	31
51	X	GW/SW Summary Report to EPA/MDEQ	73 days	Mon 8/14/17	Wed 11/22/17	Roux	50
52		**Baseline Human Health Risk Assessment Work Plan**	**124 days**	**Mon 9/18/17**	**Fri 3/9/18**	**Roux**	
53	X	Draft BHHRA Work Plan to EPA/MDEQ	60 edays	Mon 9/18/17	Fri 11/17/17	Roux/EHS Support	38
54		EPA review of Draft BHHRA Work plan	30 days	Mon 11/20/17	Fri 12/29/17	EPA	58
55	X	Response to EPA/MDEQ Comments on BHHRA Work Plan	40 days	Mon 1/1/18	Fri 2/23/18	Roux	54
56	X	Final Submission of BHHRA WP to EPA/MDEQ	10 days	Mon 2/26/18	Fri 3/9/18	Roux	55
57		**Baseline Ecological Risk Assessment Work Plan**	**124 days**	**Mon 9/18/17**	**Fri 3/9/18**	**Roux**	
58	X	Draft BERA Work Plan to EPA/MDEQ	60 edays	Mon 9/18/17	Fri 11/17/17	Roux/EHS Support	44
59		EPA reivew of Draft BERA Work Plan	30 days	Mon 11/20/17	Fri 12/29/17	EPA	58
60	X	Response to EPA/MDEQ Comments on BERA Work Plan	40 days	Mon 1/1/18	Fri 2/23/18	Roux	59
61	X	Final Submission BERA Work Plan to EPA/MDEQ	10 days	Mon 2/26/18	Fri 3/9/18	Roux	60
62		**Phase II Remedial Investigation Sampling and Analysis Plan**	**125 days**	**Mon 11/20/17**	**Fri 5/11/18**	**Roux**	
63	X	Draft Phase II Sampling and Analysis Plan to EPA/MDEQ	60 days	Mon 11/20/17	Fri 2/9/18	Roux	53,58
64		EPA reivew of draft Phase II Sampling and Analysis Plan	30 days	Mon 2/12/18	Fri 3/23/18	EPA	63
65	X	Response to EPA/MDEQ Comments on Phase II Sampling and Analysis Plan	25 days	Mon 3/26/18	Fri 4/27/18	Roux	64
66	X	Final Phase II Sampling and Analysis Plan	10 days	Mon 4/30/18	Fri 5/11/18	Roux	65
67		**South Percolation Pond Expedited Risk Assessment**	**110 days**	**Mon 10/30/17**	**Fri 3/30/18**		
68		South Percolation Pond Risk Expedited Risk Assessment Field Activities	10 days	Mon 10/30/17	Fri 11/10/17	Roux	
69		Validation of South Pond Data	20 days	Mon 11/13/17	Fri 12/8/17	Data Validator	68
70		Completion of South Pond Risk Assessment Tech Memo	80 days	Mon 12/11/17	Fri 3/30/18	Roux/EHS Support	69



Scheduled Task | Task Progress Complete | Summary